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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/057,779	01/24/2002	Tomonobu Matsuda	KNI-159-A	9335

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EXAMINER

AL NAZER, LEITH A

ART UNIT PAPER NUMBER

2828

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/057,779

Applicant(s)

MATSUDA ET AL.

Examiner

Leith A Al-Nazer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,6-10,13-15 and 17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,6-10,13-15 and 17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.


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Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: ____

DETAILED ACTION

Drawings

1. Figures 22-24 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 2, 3, 6, and 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 recites a flow path, a semiconductor laser, and a concave mirror. However, there are no structural connections defined between these elements. For example, where is the concave mirror placed with respect to the semiconductor laser and flow path?

Claim 15 recites “a reflecting mirror having a surface having different radii of curvature in the parallel direction and the perpendicular direction with respect to the flow path.” However, the claim fails to clarify the positioning of the mirror within the laser system.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese patent JP2052237 to Kazuo.

With respect to claims 7-9, Kazuo teaches a semiconductor laser (1) for generating pumping laser light; a laser medium (3) for being pumped by the pumping laser light; a reflecting mirror (6) on which the laser light irradiated from the laser medium is reflected; a flow path (8) defined by the sample fluid and being provided between the laser medium and the reflecting mirror (figure 1); a particle detecting region (10) defined by irradiating the laser light to the flow path; the light scattering particle detector being adapted for detecting particles contained in the particle detecting region by receiving scattered light generated by the laser light; wherein the optical axis of the laser medium and the optical axis of the reflecting mirror coincide (figure 1).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 1-3, 6, 10, 13-15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese patent JP2052237 to Kazuo in view of Miura et al '635.

With respect to claim 1, Kazuo teaches a semiconductor laser (1) for generating a pumping laser light and a laser medium (3) for receiving the pumping laser light and for generating an attained laser light. Claim 1 requires a concave mirror for reflecting pumping laser light from the semiconductor laser to the laser medium. Miura teaches a mirror (12) being used for reflecting light from a semiconductor laser (11). Kazuo and Miura are analogous art because they are from a similar problem solving area: systems for detecting particles by using scattered light. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the mirror of Miura with the system as taught or suggested by Kazuo. The motivation for doing so would have been to reduce noise by providing means for preventing optical feedback into the laser medium. Therefore, it would have been obvious to combine Miura with Kazuo to obtain the invention as specified in claim 1.

With respect to claims 2 and 6, Miura teaches a light scattering particle detector comprising a semiconductor laser (11) and a mirror (12). Claim 2 requires the mirror be a concave mirror. The use of a concave mirror is a matter of design choice. Many types of

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mirrors or mirror/lens combinations are capable of condensing light from the semiconductor laser onto a flow path.

With respect to claim 3, Miura teaches a condensing lens (13).

With respect to claims 10 and 13, Kazuo teaches a semiconductor laser (1) for generating pumping laser light and a laser medium (3) for receiving the pumping laser light and for generating an attained laser light. Claim 10 requires a condensing lens for directing condensed pumping laser light from the semiconductor laser to the laser medium. Miura teaches a condensing lens (13). Kazuo and Miura are analogous art because they are from a similar problem solving area: systems for detecting particles by using scattered light. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the condensing lens of Miura with the system as taught or suggested by Kazuo. The motivation for doing so would have been to direct and focus the laser light from the gain medium to a specified portion of the flow path. Therefore, it would have been obvious to combine Miura with Kazuo to obtain the invention as specified in claims 10 and 13.

With respect to claims 14 and 17, Miura teaches the condensing lens having a surface having different radii of curvature in the parallel direction and the perpendicular direction (13 in figure 4).

Claim 15 requires a reflecting mirror having a surface having different radii of curvature in the parallel direction and the perpendicular direction with respect to the flow path. With respect to claim 15, Miura teaches a reflecting mirror (6). The shape of the reflecting mirror would be a matter of design choice based on the desired focal length and concentration of light required by one's system.

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Communication Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leith A Al-Nazer whose telephone number is 703-305-2717.

The examiner can normally be reached on Monday-Friday 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 703-308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3329.

LA
February 20, 2003


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